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**3.2 Energy, Producers, and Consumers**

Lesson Objectives

Define primary producers.

Describe how consumers obtain energy and nutrients.

Lesson Summary

**Primary Producers** Sunlight is the main energy source for life on Earth. Organisms that can capture energy from sunlight or chemicals and use that energy to produce food are called **autotrophs**, or **primary producers**.

The process in which autotrophs capture light energy and use it to convert carbon dioxide and water into oxygen and sugars is called **photosynthesis**.

The process in which autotrophs use chemical energy to produce carbohydrates is called **chemosynthesis**.

**Consumers** Organisms that rely on other organisms for their energy and food are called **heterotrophs**. Heterotrophs are also referred to as consumers. There are many different types of heterotrophs:

**Herbivores**, such as cows, obtain energy by eating only plants.

**Carnivores**, such as snakes, eat only animals.

**Omnivores**, such as humans, eat both plants and animals.

**Detritivores**, such as earthworms, feed on dead matter.

**Decomposers**, such as fungi, break down organic matter.

**Scavengers**, such as vultures, consume the carcasses of other animals.

**Primary Producers**

**1.** What do autotrophs do during photosynthesis?

**2.** Can some organisms survive without energy from the sun? Explain your answer.

**3.** Can organisms create their own energy? Explain your answer.

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**Consumers**

**4.** Complete the table about types of heterotrophs.

**Types of Heterotrophs**

**Type**

**Definition**

**Examples**

Herbivore

cows, rabbits

Heterotroph that eats animals

Omnivore

humans, bears, pigs

Detritivore

Decomposer

Heterotroph that consumes the carcasses of dead animals but does not typically kill them itself

**5.** What is a consumer?

**6.** How would you categorize a consumer that usually catches and eats prey, but also eats dead animal carcasses?

**7.** What role do producers play in establishing Earth as a living planet?

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